

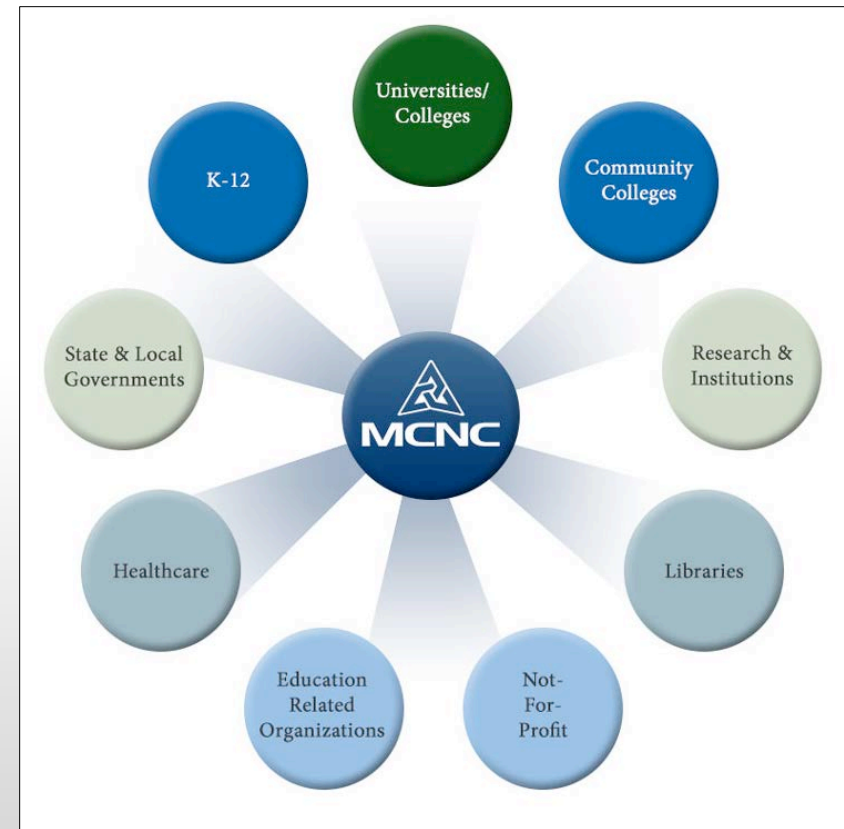
North Carolina Research and Education Network

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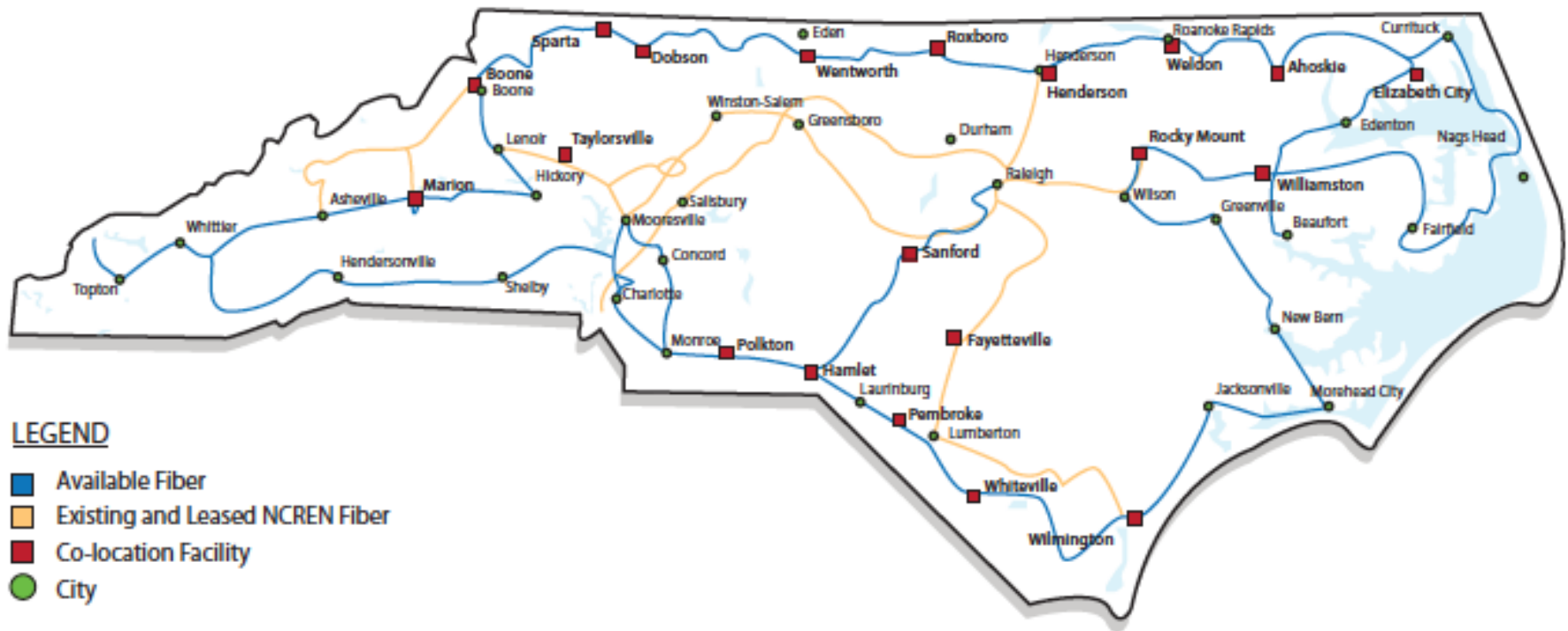


Who We Serve...

- 17 UNC System Institutions
- 26 of 37 independent colleges and universities
- 58 Community Colleges
- 115 Local Education Agencies
- (All School Districts)
- 45 Charter Schools
- Healthcare
 - 30 Hospitals (Non Profit)
 - 70 County Health Agencies and Free clinics
- RTI, NISS, NHC, Burroughs Welcome Fund, Bio Tech Center, other research institutions

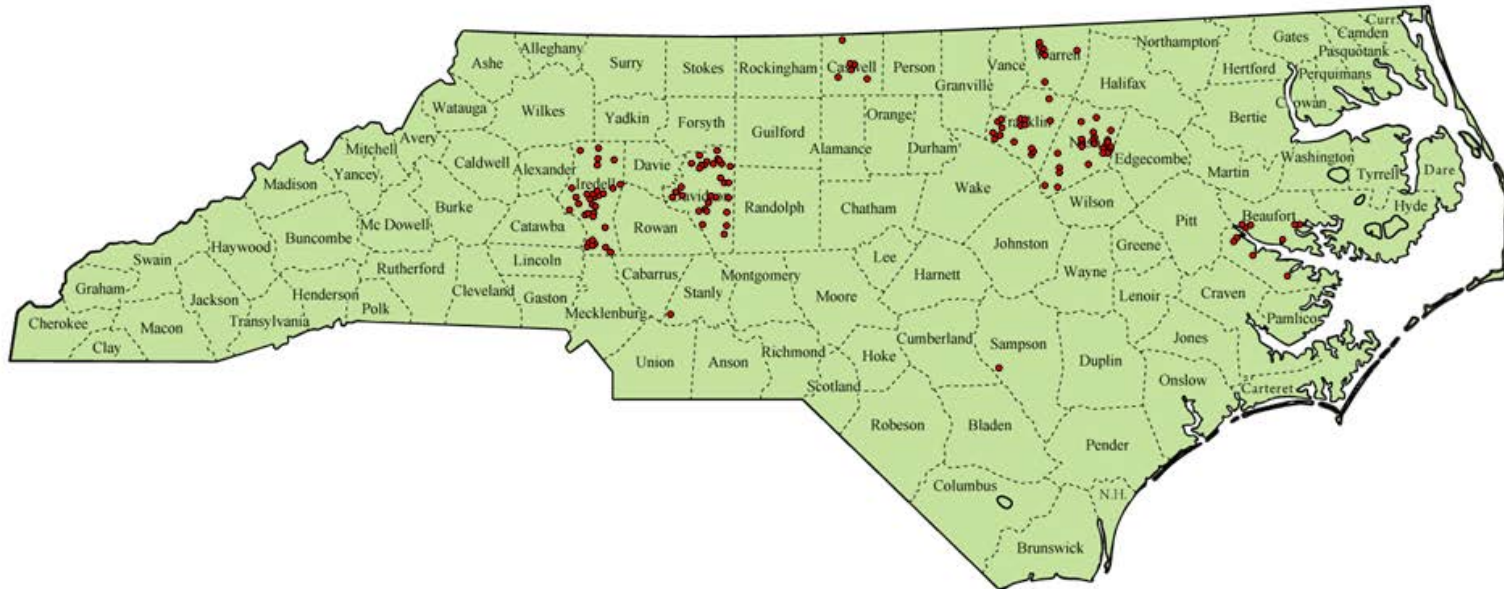


Map of North Carolina BTOP Build



**Handholes/interconnection points are available approximately every 5,000 feet or less as needed.*

Low Capacity NC K-12 School Buildings by Location



- 139 out of 2331 K-12 schools (6%) do not have access to fiber. Deploying fiber to remaining restricted K-12 schools in the state is estimated to cost \$25M-\$30M
- Additional priority for the state is the deployment of wireless access points for the classroom which is estimated to cost \$50M

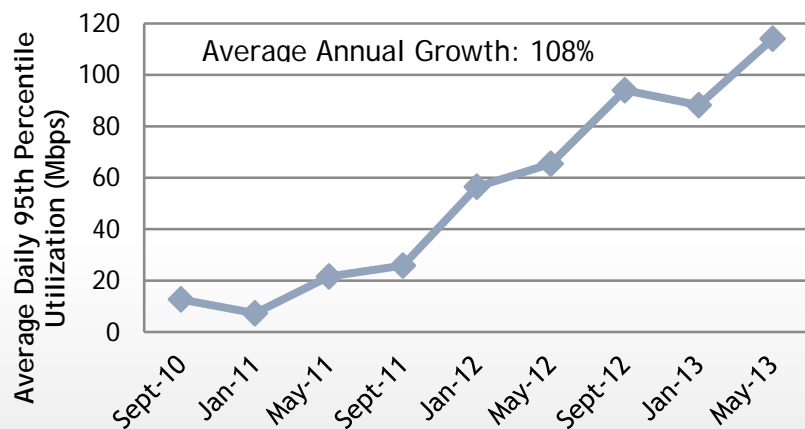
K-12 Connections “To The Classroom”

Category	Quantity
Total schools	2331
Schools with 1 WAP per classroom (high)	515
Schools with 1 WAP per 2 classrooms (int.)	928
Schools with 1 WAP per 3 classrooms (low)	818
Schools with 1 to 1 student/device ratio	371 (all in high density)

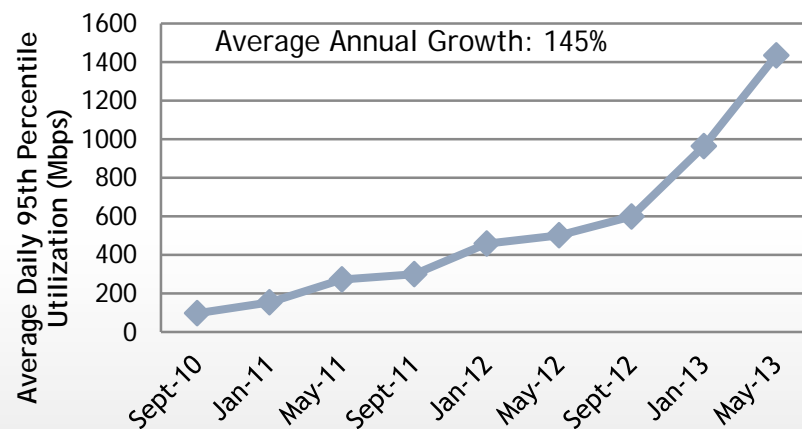


Sample Districts – Bandwidth Utilization

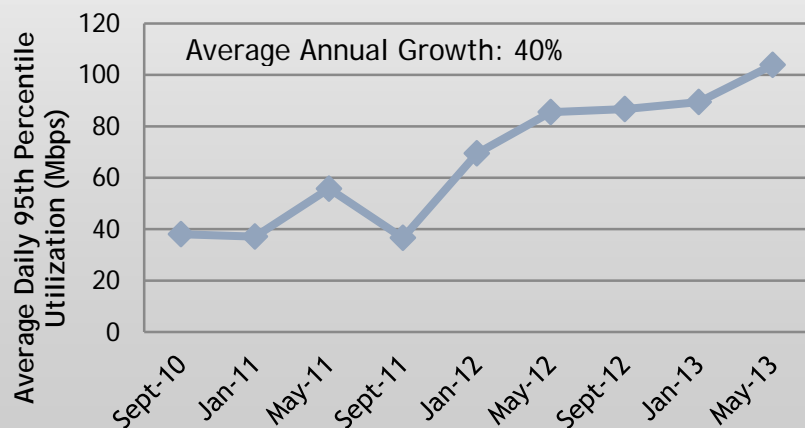
Avery County Schools



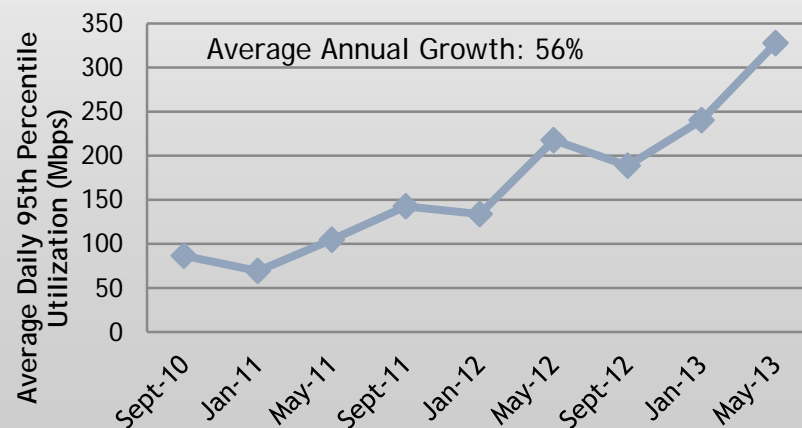
Cumberland County Schools



Halifax County Schools



Mooresville Graded



Financial Comparison – SCI vs. Before

Category	2006-2007	May 2013	
Total Bandwidth Consumption K-12	7G	45.45G	650% increase
Enrollment	1,390,168	1,474,434	
Consumption per Institution (40 charters and 115 LEAs)	28 M/month	253 M/Month 36K per student daily	
Total WAN and Internet Cost	\$13,000,000	\$14,000,000	7% decrease
Cost per MG	\$155	\$16.50 for LEA \$54 for Charter	
Added Services Firewall and Filtering	Not addressed in an aggregated fashion in 2006	\$1.37 per student	Couldn't track how much NC LEAs were spending in 2006-07

Numbers are kept by E-rate Division of DPI

MOREnet Connects Missouri

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Missouri CAls and MOREnet

- Of the total CAls in Missouri, MOREnet connects:
 - 86% of Missouri's 520 public K-12 school districts
 - 90% of Missouri's 146 public libraries
 - 93% of Missouri's 14 public 4-year higher education institutions
 - 48% of Missouri's 25 public 2-year higher education institutions
 - 43% of Missouri's 61 independent higher education institutions
 - 3% of Missouri's 540 private/parochial schools (a new market for us)



MOREnet's R&E Value Proposition for K-12 Connectivity

- Members enjoy centralized circuit bidding, procurement, monitoring, network expertise and router management services when purchasing connectivity from MOREnet
- Members benefit from our consortium E-rate filing and support
- Consortium members leverage reduced costs, technical expertise, centralized services, increased buying power and economies of scale

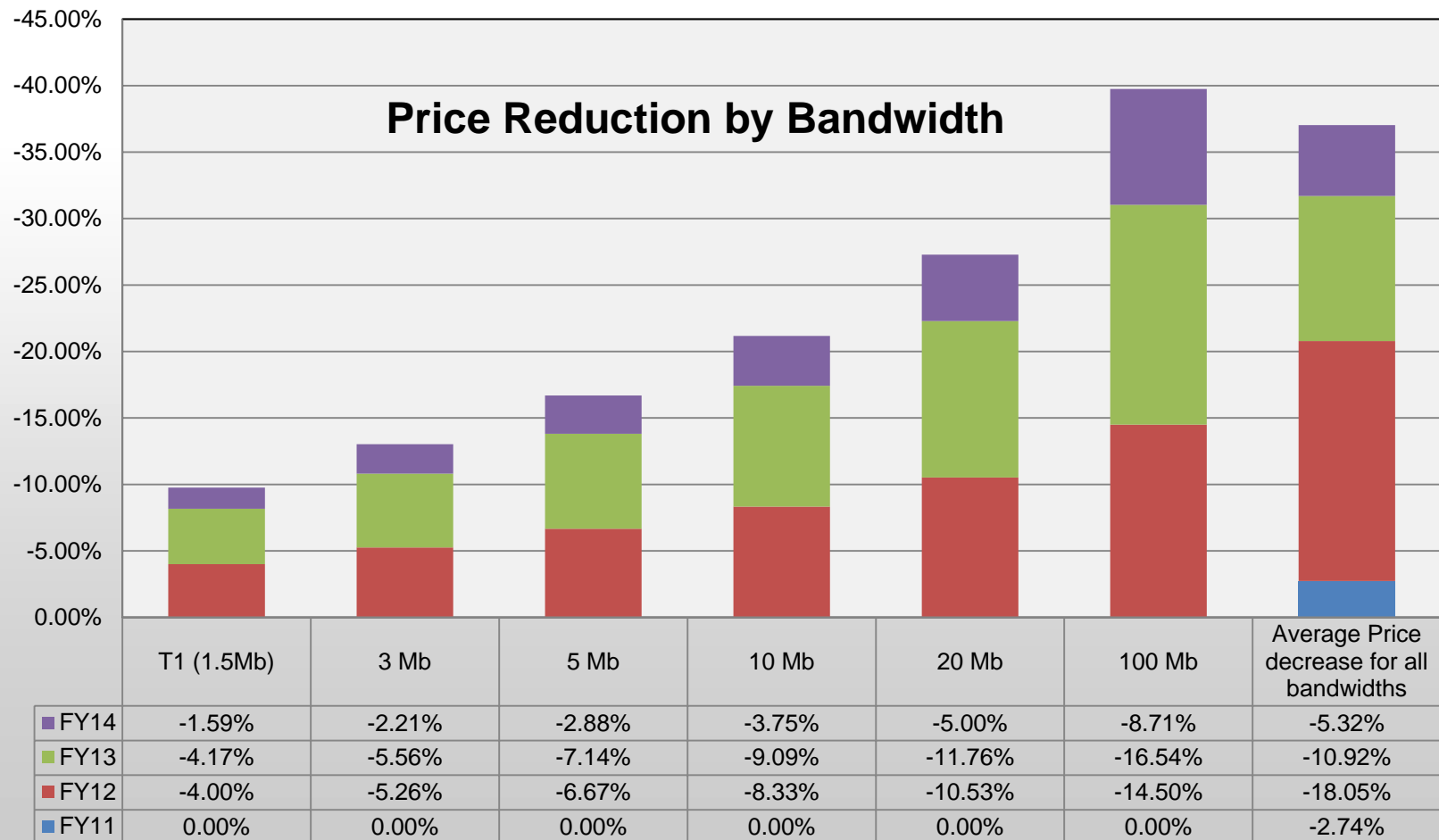


MOREnet's R&E Value Proposition for K-12 Connectivity (cont'd)

- Since losing ~\$14M in state funding in FY11, MOREnet has retained nearly 90% of our connected K-12 members
- From FY12 to FY13, public K-12 member bandwidth grew a whopping 67%
- In the last 24 months alone 73% of our K-12 sites upgraded their bandwidth

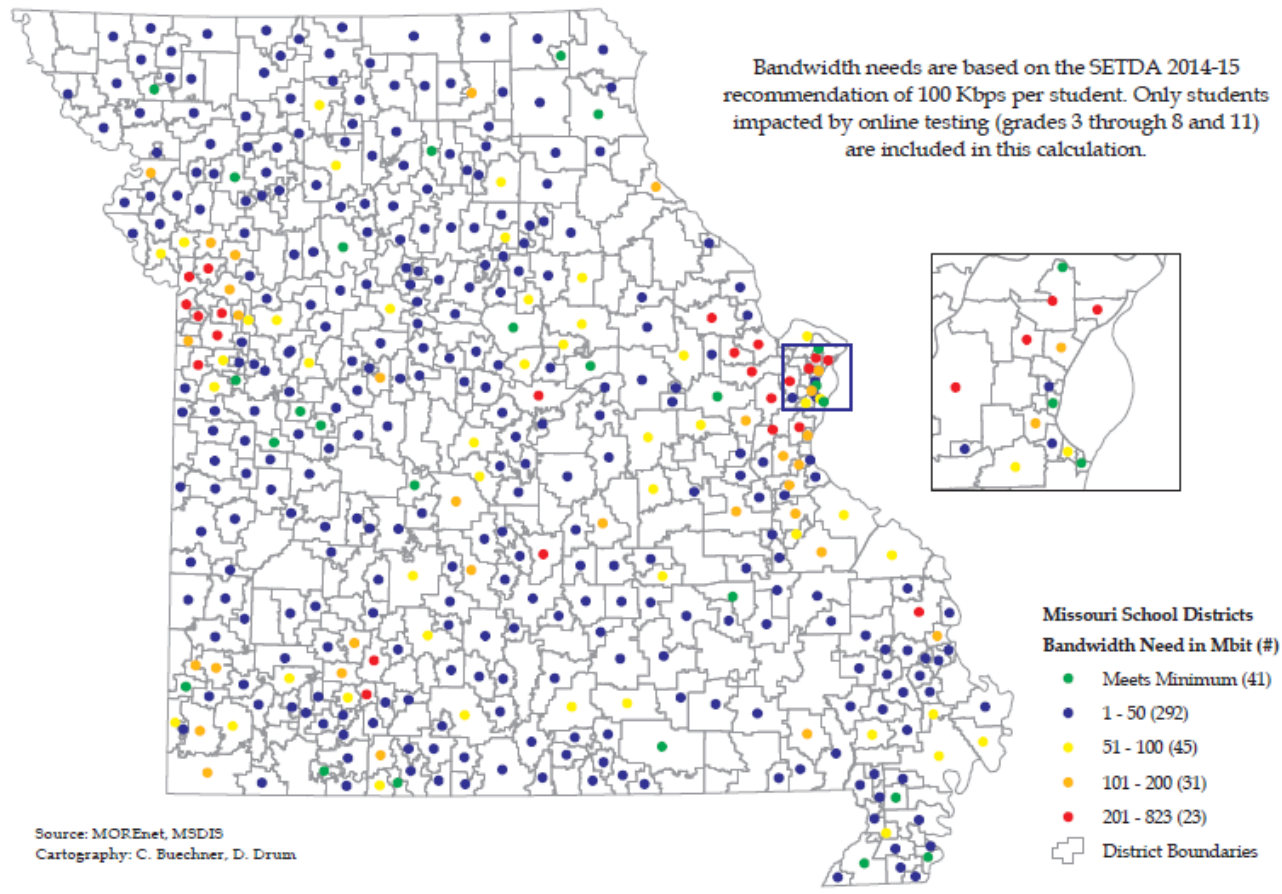


Benefits of Demand Aggregation in Missouri



Missouri Public K-12s Below SETDA's Recommended Bandwidth

Districts below Recommended Bandwidth



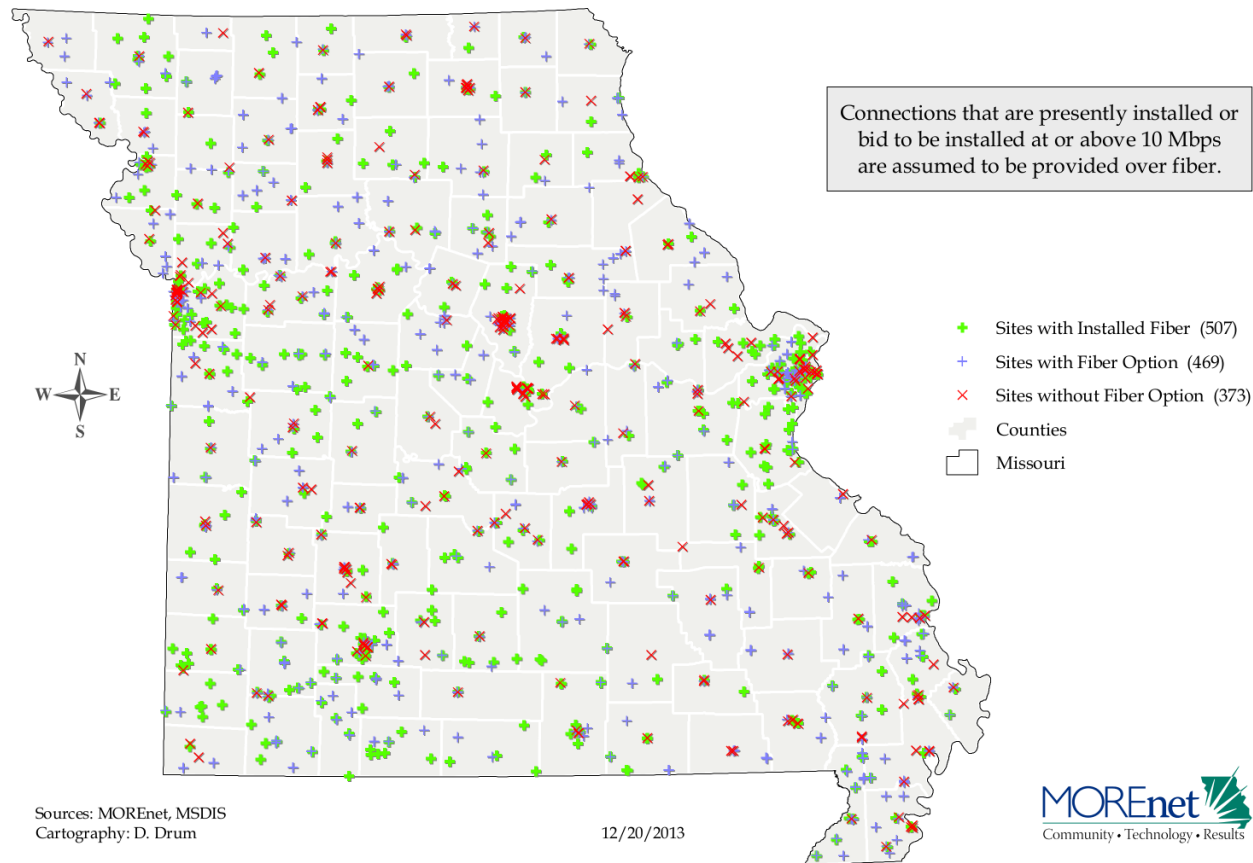
Average Kbps Per Missouri Student

	0-1,000 Students	1,001-5,000 Students	5,001-10,000 Students	> 10,000 Students
# of K12 Districts	306	122	17	17
Total Students	119,329	285,183	106,798	282,358
Avg Kbps / Student	30.5	25.3	35.4	24.8

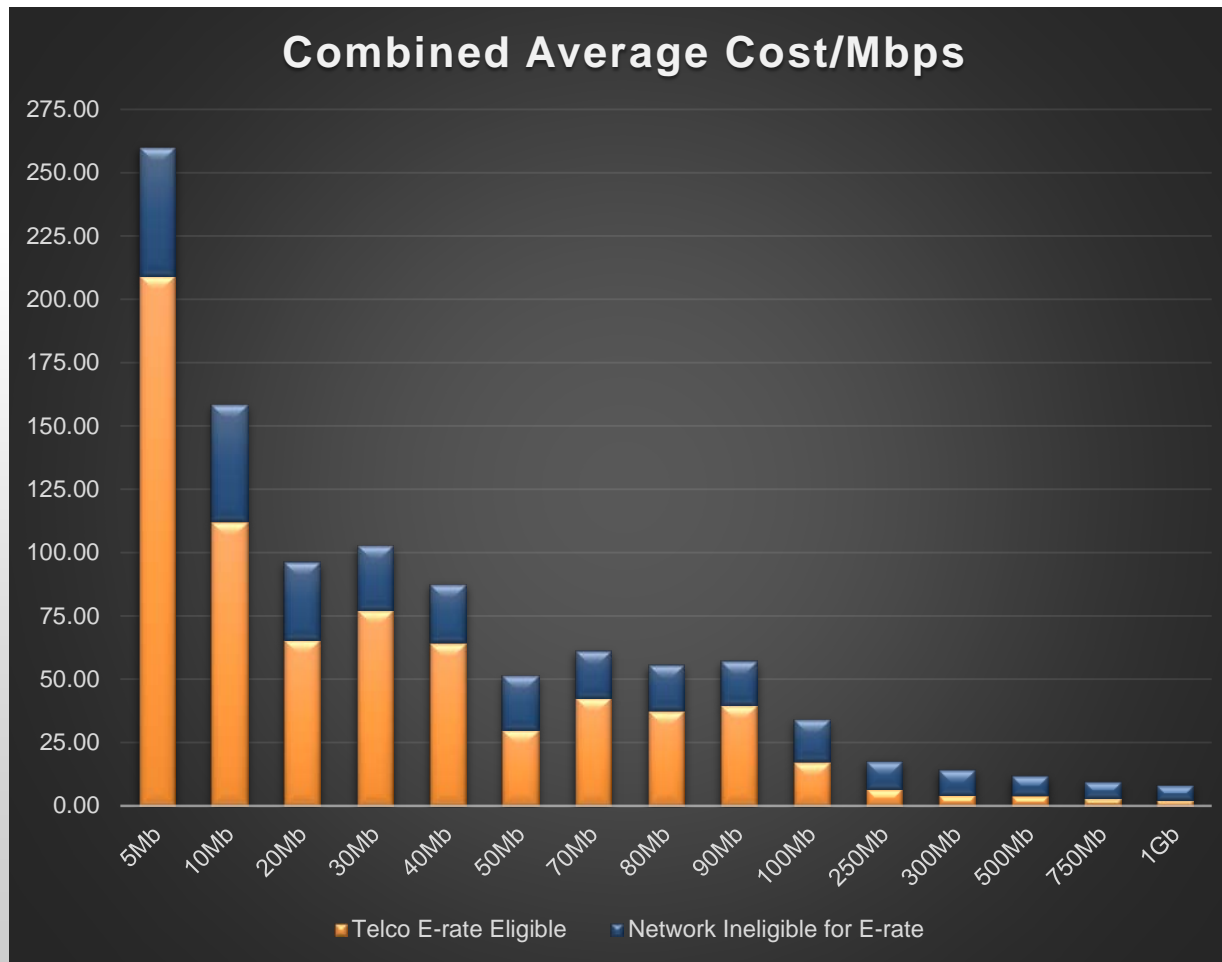


Fiber Availability for K-12 Schools in Missouri

Approximately 72% of MO K-12 schools have access to fiber



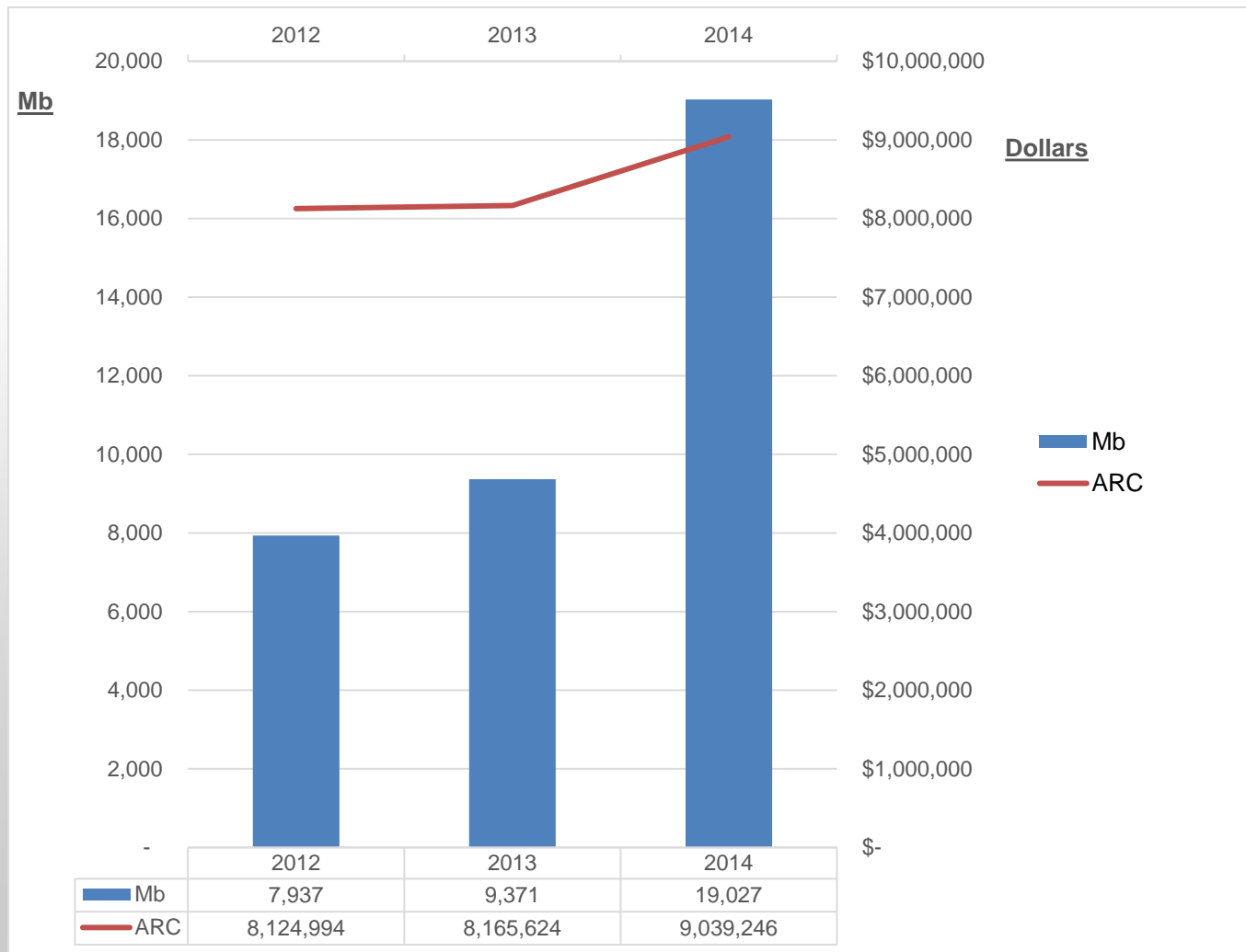
Average MRC/Mbps for Institutions in Missouri



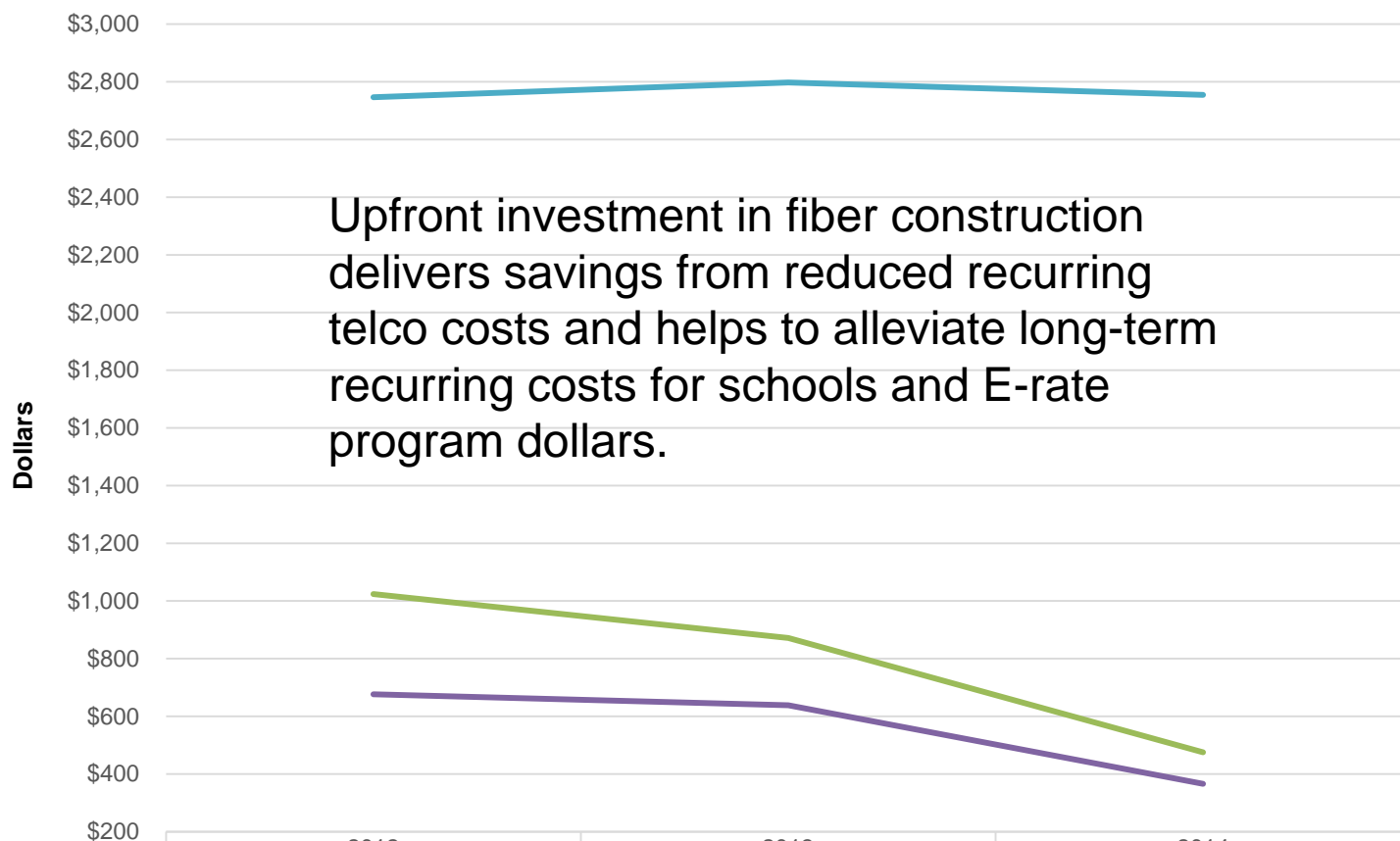
- Network costs include a net E-rate discount of 23.73%.
- Higher speed connections (100Mb+) are typically on 5 year contracts
- Lower speed connections typically on 3 year contracts



Bandwidth and Annual Recurring Telco Costs for 706 MOREnet Sites



MOREnet Annual Recurring Telco Costs/Mb by Connection Type



	2012	2013	2014
Cumulative	1,023.75	871.42	475.09
Fiber	676.67	638.59	366.16
Copper	2,746.34	2,797.55	2,754.62

